Conservation of Arctic Flora and Fauna

CIRCUMPOLAR SEABIRD GROUP

CAFF

CAFF Assessment Series Report No. 1
March 2011

ARCTIC SEABIRDS BREEDING IN THE AFRICAN-EURASIAN WATERBIRD AGREEMENT (AEWA) AREA

STATUS AND TRENDS

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This publication should be cited as:
Hentati-Sundberg, Jonas. Arctic Seabirds Breeding In The African-Eurasian Waterbird Agreement (AEWA) Area. CAFF's Circumpolar Seabird expert group (CBird), CAFF Assessment Series Report No. 1, March 2011, CAFF International Secretariat, Akureyri, Iceland. ISBN 978-9935-431-03-5

The author would like to thank all contributors to this report: The Circumpolar Seabird Group (CBIRD), GISOM - Groupement d'Intérêt Scientifique Oiseaux Marins (the French Seabird Group), Janus Elts, Martti Hario, Åke Andersson, Hans Alexandersson, Martin Green, Rob Barrett, Hallvard Strøm, Maria Gavrilo, Roddy Mavor, Jim Reid, Stefan Garthe, Thomas Bregnballe, Peter Lyngs, Bergur Olsen, Aevar Petersen, Tony Gaston, Flemming Merkel, Carsten Egevang, Bernard Cadiou, Javier Franco, Iván Ramírez and Arnþór Garðarsson.

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CAFF Designated Area

WETLANDS INTERNATIONAL

African-Eurasian Waterbird Agreement

CAFF Conservation of Arctic Flora and Fauna

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1. Introduction

This report summarizes population status and trends for 19 populations of Arctic seabirds. It is compiled as an input to the 2012 African-Eurasian Waterbird Agreement (AEWA) Report on the Conservation Status of Migratory Birds in the Agreement Area (abbreviated Conservation Status Report, CSR) being prepared by Wetlands International. The previous CSR report (CSR4) was published in 2008 and contained no detailed information of the status and trends of the Arctic seabird population analysed in this report. Thus, this is the first effort to summarize status and trends of Arctic seabirds in the agreement area. The report format including the tables are following AEWA CSR conventions, i.e., population sizes are expressed in individuals and trend calculations and status categories are based on AEWA guidelines. The AEWA agreement text, Action Plan and previous CRS Reports are available at: www.unep-aewa.org

Abundance estimates have largely been based on counts of breeding birds or occupied nests in colonies, which is the most usually applied method of censusing colonial seabirds. Numbers reported as pairs or occupied nests have been multiplied by three to get the number of individuals. Trends have been calculated using published data from national monitoring programs and national censuses, as well as some previously unpublished data from national experts.

Topographic map of the Arctic

2. STATUS AND TRENDS

2.1 Northern Gannet *Morus bassana*


Northern Gannet by Alan D. Wilson

Northern Gannet has increased in numbers within its core range on the British Isles and also expanded its range in recent years. In UK and Ireland, the breeding population in 2004-2005 was 262 000 pairs with its main distribution in Scotland (182 500 pairs), followed by Ireland (36 000 pairs) and Wales (32 100 pairs) (46). St Kilda in Scotland holds the world's biggest gannet colony with 60 400 pairs in 2005 (75). Other countries with significant numbers include Iceland (31 500 pairs) (33), France (21 500 pairs) in the Bretagne region (20), mainland of Norway (4 500 pairs) (7) and the Faroes (2 350 pairs) (45). Germany holds one colony in Helgoland, which amounted 424 pairs in 2010 (24). As a part of the large-scale range expansion, Northern Gannet also colonized Russia in 1996 with one breeding pair in the Murmansk area. In 2008, 150 – 250 pairs bred in Russia (72).

The species is increasing in all countries in the AEWA area except from the Faroes where the population is stable (45). The world population has increased continuously from around 50 000 pairs in the beginning of the 20th century to the current around 400 000 pairs (75).

Northern Gannet is endemic to the North Atlantic, and the only breeding population outside the AEWA region is in eastern Canada; the size of this population has been estimated to 77 700 pairs (18). During winters, gannets from Europe migrate south, some are crossing the equator and winter off Africa. There is no evidence of mixing between the populations in Europe and NW Atlantic, but birds ringed in Canada have been recovered in southern Europe and Northwestern Africa (75).

2.2 Great Skua *Catharacta skua*


Great Skua Photo by Psychofox, Wikipedia

The world population of Great Skua is restricted to the North-East Atlantic, and all breed within the AEWA area. The core breeding area is on the British Isles (9 600 pairs) (46) and in Iceland (5 400 pairs) (53). The species also breed in Faroe Islands (500 pairs) (45), on the Norway mainland (115 pairs) (8), on Svalbard (200 – 350 pairs) (6), and on Jan Mayen (10 pairs)(33). 150 – 250 pairs do also breed along the Murmansk Coast in Russia (72).

The species has increased in numbers in the British Isles during many centuries, and ringing recoveries have shown that birds breeding in Shetland (the area in the world with the biggest Great Skua population) have emigrated to establish new colonies in the north (30). Colonies were established at Bear Island 1970, Svalbard 1970, Norway mainland 1975, Jan Mayen 1984 and NW Russia 1989 (31). Great Skua continues to increase on the Norway mainland, on the Faroes, and on Svalbard (8, 45, 6). Data from Scotland shows an increase up to the Seabird 2000 census (1998-2002). More recent, reliable trend information for the whole population is lacking, but new data indicate a strong decline in one of the biggest colonies, Hoy in the Orkney Islands, between 1999 and 2010 (46). It is unclear whether this colony is representative for the whole British population (46).

Great Skua is a migratory species, wintering off France and the Iberian Peninsula; there are also some wintering records from Cap Verde, Brazil and the Caribbean (22).

2.3 Long-tailed Skua *Stercorarius longicaudus*


Long Tailed Skua by Jerzy Strzelecki

The distribution of Long-tailed Skua is circumpolar and predominantly Arctic (32). The breeding population in Scandinavia and W Russia belongs to the nominate subspecies *longicaudus* whereas the Long-tailed Skuas in Greenland, North America and E Russia belongs to the *pallescens* subspecies (22). Consequently, the AEWA area covers the whole world population of *longicaudus* but only parts of the world population of *pallescens*. This analysis covers the two subspecies jointly for the whole AEWA area.

Long-tailed Skua typically fluctuates in numbers and is difficult to survey; it is thus difficult to obtain good estimates on population sizes and trends. It breeds in Sweden (7 800 pairs) (63) and Norway (1 000 – 5 000 pairs) (74). The population in Finland is estimated to 200 – 10 000 individuals (70). One pair breeds in Iceland (50). The number of individuals in the AEWA part of Canada, which is only a small part of the North-Eastern Arctic Canada, is estimated to 10 000 individuals, but good survey data is lacking (2). The corresponding estimate for the whole arctic Canada, including outside the AEWA region, is 10 000 – 100 000 pairs (68).

There are big uncertainties regarding the trends reported from different countries. The population in Sweden is stable but data quality is poor (64). There is no recent trend estimates reported for Finland, Norway or Canada. In Greenland, Long-tailed Skua is decreasing after years of fluctuating numbers (12,39) Long-tailed Skua is a migrating species, and winters offshore between the Southern parts of Africa, South America and Antarctica (32).

2.4 Black-legged Kittiwake *Rissa tridactyla*


Black Legged Kittiwake by Steve Hillebrand

Black-legged Kittiwake is the most abundant gull globally and has a circumpolar distribution. The nominate subspecies *tridactyla* breeds in the AEWA region from W Arctic Russia to Scandinavia, Svalbard, Iceland, Greenland, British Isles, France, Iberian peninsula and Canada. It winters offshore in the North Atlantic, and it is likely that populations from various areas mix during winter (42). Ringing in the British Isles indicate some exchange with population in North America and Greenland (19). Black–legged Kittiwake has increased significantly during much of the 20th century (22), but started to decline in recent years in many areas.

Within the AEWA area, Black-legged Kittiwake has its biggest breeding populations in Iceland (631 000 pairs) (15), British Isles (416 000 pairs) (46), Norway mainland (336 000 pairs) (8), Faroe Islands (160 000 pairs) (45), Russia (< 160 000 pairs) (72), Canada (109 000 pairs) (57,56) and Greenland (110 000 pairs) (51). Countries with minor breeding populations include Germany (6 995 pairs at Helgoland) (24), France (5000 pairs) (17, 20), Denmark (364 pairs) (16), Sweden (41 pairs) (63) and Spain (21 pairs) (9).

Among many of the countries with the highest population numbers, Black-legged Kittiwake is declining. This is true for Greenland (51), Iceland (35), the British Isles (46), mainland Norway (8) and the Faroe Islands (45). The Arctic Canada population is however increasing with approximately 1 % per year (57, 56). In the countries with less significant population numbers, it is stable in Germany (24), France (17, 20) and Sweden (64), and declining in Denmark (16) and Spain (9). The decline within the AEWA area fulfils the AEWA criteria for categorization as Significant Long-term Decline.

Black-legged Kittiwake subspecies *tridactyla* occurs in addition to the AEWA area in Canada (outside the AEWA region approx. 110 000 pairs)(68) and in New England (21). In eastern Russia and the Pacific, Black-legged Kittiwake subspecies *pollicaris* breed with over 1 million pairs in Eastern Russia and over 700 000 pairs in Alaska (42).

2.5 Little Auk *Alle alle*

Little Auk is the most abundant alcid and one of the most abundant seabirds worldwide. The distribution is in the North Atlantic, and the majority of the world population is breeding within the AEWA area. Greenland hosts the biggest population with an estimated 33 million pairs in West Greenland (25) and 5 – 10 million pairs in East Greenland (49). There are also big numbers of Little auks breeding in Svalbard (≈ 1 million pairs) (6), Jan Mayen (10 000 – 100 000 pairs) (10) and Russia (55 000 – 75 000 pairs) (72). In the Canadian part of the AEWA area, at maximum 1000 individuals are present (29).


Little Auk by Carsten Egevang/ARC-PIC.COM

Trends are unknown for all breeding areas. Estimates for Little Auk abundance in Greenland vary significantly; the most recent, high number, for West Greenland (at least 33 million pairs)(25) is based on extrapolation of data from aerial surveys. Earlier studies have estimated the total breeding numbers in whole Greenland between 7 and 20 million pairs (62, 11). Despite the great variability in population size estimates, Little auk is without doubt the most abundant seabird in the Northern hemisphere.

Little Auks disperse during winter, major concentrations are found south west of Greenland, but some are also wintering around Svalbard, in the Norwegian Sea and the North Sea down to Skagerrak (14).

2.6 Common Guillemot *Uria aalge*

Common Guillemot has a circumpolar distribution and is one of the few alcid species that occur both in the Atlantic and the Pacific. As Common Guillemots are highly colonial and breed on exposed cliffs, they are relatively easy to survey, and population data is comparatively good. Common Guillemots winters offshore, mostly within the breeding range (22). Five subspecies are recognized, of which three are present in the AEWA area.

2.6.1 ssp. *aalge*

Distributed in East North America, Greenland, Iceland, Faeroes, Scotland, S Norway and the Baltic Sea (22). Within AEWA area, the highest numbers are in Iceland (690 000 pairs) (44), Scotland 782 000 (46), Faroes (100 000 pairs) (45). On the Norway mainland, the *aalge* subspecies is according to the literature distributed in Central and Southern Norway, to be replaced by *hyperborea* further north, although the exact distribution is not clear. According to this geographical delineation for subspecies, the number of breeding *aalge* on the Norway mainland (in the Norwegian Sea and North Sea areas) is 5 150 pairs (8). Subspecies *aalge* also breed in Southern Greenland, the population estimated to 1 500 pairs (13).


Thick-billed Murre by Flemming Merkel

Common Guillemot ssp. *aalge* does also breed in the Baltic Sea, and it has sometimes been suggested to consist of a separate subspecies (intermedia). A recent study does however not support separating Baltic Sea Common Guillemot from the *aalge* subspecies (69). In the Baltic Sea, the Common Guillemot population totals 14 000 pairs, distributed between Denmark (2 800 pairs, islands Ertholmerne) (55), Finland (70-140 individuals) (70) and Sweden (11 000 pairs) (63).

In the core distribution area, the North Atlantic, *ssp. aalge* is declining. The population in Iceland is declining after many previous decades of increase (35), and the populations in Scotland, Norway and the Faroes are also declining (46, 8,45). In Baltic Sea however, Common Guillemot is stable in Sweden (64) and increasing in Finland (70) and Denmark (55). The decline within the AEWA area fulfills the criteria for categorization as Significant Long-term Decline. Outside the AEWA region, *Uria aalge aalge* breeds in Eastern Canada with approximately 500 000 pairs (40).

2.6.2 ssp. *albionis*

The subspecies *albionis* has a restricted range in Britain and Ireland (not including Scotland) Helgoland, France (Brittany) and the Iberian Peninsula (22). The whole world population of *Uria aalge albionis* breed within the AEWA area. The majority of the birds are on the British Isles (262 000 pairs) (46) followed by Germany (2 250 pairs at Helgoland) (24) and France (270 – 300 pair) (20). The total number on the Iberian peninsula has decreased dramatically during many decades and is today below 50 pairs (3, 60).

In the core area in the British Isles, *Uria aalge albionis* is increasing (46) and the population in France is also increasing (17,20). The population in Helgoland is stable (24).

2.6.3 ssp. *hyperborea*

Uria aalge hyperborea replaces *aalge* N of approx. 69°N and breed in North Norway, Svalbard and W Russia. The population consists of approximately 125 000 breeding pairs, breeding in Svalbard (100 000 pairs) (6), N Norway (Barents Sea area) (< 10 000 pairs) (8), Murmansk Coast, Russia (7 800 – 8 400 pairs) (72) and in Novaya Zemlya (750 pairs) (72) and Jan Mayen (500 – 1 000 pairs) (73).

Subspecies *hyperborea* has been increasing up to 1996 in the most important breeding locations in Russia and Svalbard (6), and until 2005 in mainland Norway (8). There is no more recent trend information available.

2.7 Brünnich's Guillemot *Uria lomvia*

Uria lomvia has a circumpolar distribution with breeding populations both in the North Pacific and North Atlantic. There are four subspecies recognized, of which only the nominate subspecies *lomvia* breeds within the AEWA area. Good census – and trend data for Europe is lacking (7). Brünnich's Guillemots are dispersing rather than migrating, some towards Greenland and Newfoundland, others are found along the pack-ice limits in Barents Sea (7).

The countries with the biggest population in the AEWA area are Russia (275 000 – 525 000 pairs) (72), Svalbard (850 000 pairs) (72), Arctic Canada (680 000 pairs) (1,2), Greenland (330 000 pairs) (58, 61), Iceland (325 000 pairs) (44) and Jan Mayen (74 000 – 147 000 pairs) (10). There are also some Brünnich's Guillemots breeding on the Norway mainland (1 510 pairs) (8).

Monitoring of Brünnich's Guillemot indicate declines in most of its range in the AEWA region. Significant declines have been reported from Iceland (35), Greenland (58, 61), the Norwegian mainland (8) and Russia (6). Brünnich's Guillemot has however increased in Canada with approximately 1 % per year. Overall, on the whole population scale, the population shows a significant long-term decline according to the AEWA criteria.

2.8 Razorbill *Alca torda*

A species endemic to the North Atlantic, highly dispersed as a breeder in a large area from the White Sea to Norway, Iceland, Greenland and North America. The Razorbill is widespread in Europe, with populations in the Baltic Sea and North Sea, down to France (22, 43). The Razorbill is partially migratory and moves southwards during winter (43). Large concentrations occur in around the British Isles in the end of the breeding season (43). Two subspecies are recognized; both having their complete distribution within the AEWA area.


Razorbill by GSD97JKS, Wikipedia

2.8.1 ssp. *torda*

The strongholds for ssp. *torda* are the Norway mainland (25 300 pairs)(8), Russia 4 000 – 5000 pairs (72), Greenland 3 000 – 6 000 pairs (68), Denmark (1 200 pairs) (16), and Canada (1 000 individuals) (2). Recent trend information for those countries is lacking. The *torda* subspecies has also a strongly increasing population in the Baltic Sea, with 25 000 pairs distributed along the coasts of Sweden (63, 64), 14 000 – 17 000 individuals in Finland (70), 1 200 pairs in Denmark (islands Ertholmene and Bornholm) (54, 55) and 1 – 10 pairs in Estonia (26).

2.8.2 ssp. *islandica*

The subspecies *islandica* has its core breeding area in Iceland (310 000 pairs) (44) and on the British Isles (145 000 pairs) (46). In the Faroe Islands, additionally 4 500 pairs of this subspecies breed (37). Small populations breed also in France (31-33 pairs) (20) and in Germany (16 pairs on Helgoland)(24). *Alca torda islandica* is decreasing in numbers in Iceland after many years of increase (35).

In the British Isles, colonies sampled for the Seabird Monitoring Programme show an apparent decline over the last decade. However, it is thought the colonies sampled may be unrepresentative of the population as a whole because during the preceding years, from 1986 to 1999, the percentage change in abundance in the sample was double the actual change that occurred in the total population (as shown by more comprehensive census data) (46).

The species is increasing in France after a long period of decline (17,20), stable in Germany (24) and the current trend for the Faroes is unknown.

2.9 Black Guillemot *Cepphus grylle*

Black Guillemot has a circumpolar distribution. This species breed less concentrated than the other alcid species and is thus more difficult to monitor. Population status - and trend data is reported here is relatively uncertain. Black Guillemot is more sedentary than to the other alcids and feeds usually in inshore areas (28). Five subspecies are recognized, and all of them occur within the AEWA area.

2.9.1 ssp. *grylle*

The nominate subspecies breeds in the Baltic Sea, with 9700 pairs in Sweden (63), 34 000 – 40 000 individuals in Finland (70) and 20 – 40 pairs in Estonia (26). The population has declined in Sweden (64, 5) but is stable in Finland (70) and Estonia (26). The population within the AEWA region is the whole world population of this subspecies.

2.9.2 *ssp. mandtii*

This Arctic subspecies has a wide distribution range. The highest numbers are in Arctic Canada with an estimated number of 250 000 individuals (36, 2). Large numbers do also breed in Svalbard (20 000 pairs) (6), Greenland (10 000 – 20 000 pairs) (13), Novaya Zemlya (6 000 – 7 000 pairs) (72) and Franz Josef Land (3 000 – 4 000 pairs) (72). There has also been some *Cepphus grylle mandtii* breeding in Jan Mayen (100 – 1 000 pairs) in the past (27), but no recent information is available for that population. *Cepphus grylle mandtii* also breeds outside the AEWA region in SW Canada (Labrador and Newfoundland). Trend information is lacking from the breeding areas.


Black Gullemot by Henrik Thorburn

2.9.3 ssp. *arcticus*

This subspecies is also widely distributed but has a more southerly distribution than ssp. *mandtii*. The delineation between *mandtii* and *arcticus* in Greenland is not completely clear (11). *Cepphus grylle arcticus* breed in S Greenland (180 000 – 190 000 pairs) (11), on the Norway mainland (35 400 pairs) (8), in the Murmansk Coast and White Sea in Russia (8000 pairs) (72) and in the British Isles (21 000 pairs) (46). Smaller populations inhabit Denmark (1 400 pairs) (16) and the Swedish west coast (1 300 pairs) (63). Outside the AEWA area, *arcticus* breed in North America, south of the *mandtii* distribution area (22).

Good trend data is lacking for some of the countries having the largest breeding populations. In Greenland, Black Guillemot is probably stable (11) and it is stable also in the BritishIsles (46). The trend is not known for the Norwegian mainland population (8). The Danish population is increasing (16) and the Swedish west coast population is probably stable (52, 4), although Swedish long-term monitoring data is lacking (23).

2.9.4 ssp. *islandicus*

This subspecies only breeds in Iceland, the estimated population size is 10 000 – 15 000 pairs. The population has exhibited a significant long-term decline (67,48, 47).

2.9.5 ssp. *faeroeensis*

This subspecies only breeds in the Faroes, with a total population of about 3 500 pairs (37). No recent data on the trend of this population is available.

2.10 Atlantic Puffin *Fratercula arctica*

Atlantic Puffin has a wide breeding distribution in the North Atlantic, from Novaya Zemlya in the East to Norway, Svalbard, Iceland, Faroes, Greenland and Canada, and in Europe on the British Isles and France. This species disperse during winter and is generally found in low concentrations from the ice edge in North down to Azores, Canary Islands and the South Eastern USA (41).

There is doubt whether Atlantic Puffin has true subspecies - the morphometric variation observed does indicate a clinal variation rather than discrete populations. Many authors, including recently released recommendations from the British Trust for Ornithology, have suggested treating Atlantic Puffin as monotypic (71). A recent publication from the British Seabird 2000 census treats ssp. *grabae* and *arctica* jointly and *naumanni* as a separate subspecies (59).

Three subspecies are still considered in the Howard and Moore Checklist of the Birds of the World (23): *naumanni*, *arctica* and *grabae,* which all have their main breeding areas within the AEWA region.

2.10.1 ssp. *naumanni*

This subspecies is the most Northern, and least abundant Atlantic Puffin subspecies, and it is having its whole breeding distribution within the AEWA area. Breeding occurs in Svalbard (10 000 pairs) (6), Jan Mayen (1 000 pairs), Arctic Canada (< 1 000 individuals) (2), Greenland (100 – 200 pairs) (11), and N Novaya Zemlya (> 100 pairs) (6, 72). The trends are unknown for all areas.


Atlantic Puffin by Mark Marissink

2.10.2 ssp. *arctica*

Subspecies *arctica* is distributed between the Northern area of *ssp. naumanni* and the southern areas of *ssp. grabae*. The main breeding areas are in Iceland (3 – 4 million pairs) (15) and the Norwegian mainland (1.7 million pairs) (8). *Fratercula arctica artica* occurs also in much smaller numbers along the Murmansk Coast (< 5 000 pairs) and in S Greenland (3 000 – 5 000 pairs).

In Central and Northern Norway, the trends for *arctica* are different between regions, with decline in the Norwegian Sea region and increase in the Barents Sea region up to 2005 (8). Subspecies *arctica* does also breed outside the AEWA area: in NE U.S.A. with approximately 50 pairs (40).

2.10.3 ssp. *grabae*

Subspecies *grabae* is the southernmost distributed Atlantic Puffin subspecies with colonies in the British Isles (600 000 pairs) (46), the Faroes (550 000 pairs) (37) on in Southern Norway (14 000 pairs) (8). A minor breeding population is also found in France (130 – 177 pairs) (17, 20).

Atlantic Puffin ssp. *grabae* was increasing in its core area in the British Isles until the early part of this century at least. However, recent complete counts of occupied burrows from two of the largest colonies (Farne Islands and Isle of May) indicate substantial declines of 17 - 34% between 2003 and 2008/2009 although it is not know whether these decreases are representative of the UK as a whole (46).

There is no recent trend information available for the Faroes population. The small French population has declined in a long-term perspective and continues to do so (17, 20). The trend for the S Norwegian population is unknown. This subspecies is, if considered as a true subspecies, endemic as a breeder to the AEWA region.

3. TABLES

Table 1: List of Arctic seabird populations, their breeding ranges, wintering areas and global occurrence

Population	Breeding range	Wintering, or core non-breeding range	Africa	Europe	Asia	Oceania	Neotrop	NAmer
***Sula (Morus) bassana* Northern Gannet**	GB, Iceland, France, Norway, NW Russia, Helgoland	NE Atlantic, off W Africa		X				X
***Catharacta skua* Great Skua**	NE Atlantic	N + C Atlantic		X				
***Stercorarius longicaudus* Long-tailed Skua**								
longicaudus	Scandinavia, Russia, Greenland Canada	off S Africa, S America, Antarctica		X	X			X
***Rissa tridactyla* Black-legged Kittiwake**								
tridactyla	Circumpolar	N Atlantic		X	X			X
***Alle alle* Little Auk**								
alle High Arctic, Baffin Is – Novaya Zemlya	Greenland, Svalbard, Arctic Canada, Arctic Russia	N Atlantic		X	X			X
***Uria aalge* Common Guillemot**								
aalge	E North America, Greenland, Iceland, Faeroes, Scotland, S Norway, Baltic	N Atlantic		X				X
albionis	Ireland, S Britain, France, Iberia, Helgoland	N Atlantic		X				
hyperborea	Svalbard, N Norway to Novaya Zemlya	N Atlantic		X	X			
***Uria lomvia* Brünnich's Guillemot**								
lomvia	E North America, Greenland, E to Severnaya Zemlya	N Atlantic		X	X			X
***Alca torda* Razorbill**								
torda	E North America, Greenland, E to Baltic & White Seas	N Atlantic		X				X
islandica	Iceland, Faeroes, Britain, Ireland, Helgoland, NW France	N Atlantic		X				
***Cepphus grylle* Black Guillemot**								
grylle Baltic Sea	Baltic Sea	Baltic Sea		X				
mandtii	Arctic E North America to Greenland, Jan Mayen & Svalbard E through Siberia to Alaska	N (Arctic) Atlantic		X	X			X
arcticus	N America, S Greenland, Britain, Ireland, Scandinavia, White Sea	N Atlantic		X				X
islandicus	Iceland	N Atlantic		X				
faeroeensis	Faeroes	N Atlantic		X				
***Fratercula arctica* Atlantic Puffin**								
arctica	Hudson Bay & Maine E to S Greenland, Iceland, Bear Is, Norway to S Novaya Zemlya	N Atlantic		X	X			X
naumanni	NE Canada, N Greenland, to Jan Mayen, Svalbard, N Novaya Zemlya	N Atlantic		X	X			X
grabae	Faeroes, S Norway, Britain, Ireland, NW France	N Atlantic		X				

Table 2: Status and trends of Arctic seabird populations, and references to original studies on which the estimates are based

Population	Abundance estimate 2011*	Source abundance 2011	Trend 2011	Source trend 2011
Morus bassanus	967,000	8, 15, 20, 24, 34, 45, 46, 72	increase	8, 15, 17, , 24, 34, 46, 72
Catharacta skua	48,000	6, 8, 45, 46, 53, 72	increase	6, 8, 46, 53, 72
Stercorarius longicaudus	C – D**	15, 12, 39, 50, 63, 70, 74, 2	(stable)	12, 39, 50, 64, 70, 74
Rissa tridactyla	6,600,000	6, 8, 9, 10, 15, 20, 24, – 45, 46, 51, 56, 57, 63, 16, 72	decline	6, 8, 9, 10, 17, 20, 24, 35, 45, 46, 51, 56, 57, 64, 16, 72
Alle alle	117,000,000 – 133,000,000	6, 10, 25, 29, 49, 72	unknown	
Uria aalge aalge	4,800,000	8, 13, 44 - 46, 54, 63, 70, 55	decline	8, 13, 35, 46, 64, 70, 55
Uria aalge albionis	800,000	3, 20, 24, 46	increase	3, 17, 20, 24, 46
Uria aalge hyperborea	330,000 – 360,000	6, 8, 9, 15, 72	(increase)	6, 8, 9, 15, 72
Uria lomvia	7,600,000 – 8,600,000	6, 8, 10, 1, 44, 58, 61, 2	decline	6, 8, 35, 1, 58, 61, 2
Alca torda torda	190,000 – 205,000	6, 8, 26, 54, 63, 68, 70, 73, 55, 2, 72	increase	8, 26, 64, 68, 70, 73, 55, 2, 72
Alca torda islandicus	1,380,000	20 24, 37, 44, 46	decline	17, 20, 24, 35, 37, 46
Cepphus grylle grylle	63,000 – 69,000	26, 63, 70	(stable)	26, 63, 70
Cepphus grylle mandtii	365,000 – 405,000	6, 13, 27, 36, 2, 72	unknown	
Cepphus grylle arcticus	740,000 – 770,000	8, 13, 46, 64, 16, 5, 72	(stable)	46, 63, 72
Cepphus grylle islandicus	30,000 – 45,000	67	decline	67
Cepphus grylle faeroeensis	10,000	37	unknown	
Fratercula arctica arctica	14,000,000 – 17,000,000	8, 13, 15, 72	(decline)	8, 13, 15, 72
Fratercula arctica naumanni	35,000	6, 13, 73, 2, 72	unknown	
Fratercula arctica grabae	3,500,000	8, 17, 20, 37, 46	(increase)	17, 37, 46

* Number of individuals

** C-D according to AEWA guidelines means that the population size is something between 25.000 and 1 million individuals

Table 3: Current status of Arctic seabird populations according to AEWA criteria, status judgement the previous assessment (2005) and justification of status change 2005 - 2011

Population	Status 2005	Status 2011	Justification of change
Morus bassanus	B2a	C1	Does not fulfill B2a criteria[1]
Catharacta skua	B1	B1	
Stercorarius longicaudus	C1	C1	
Rissa tridactyla	B2a	B2c	Does not fulfill B2a criteria[1]. Significant long-term decline within AEWA.
Alle alle	B2a	C1	Does not fulfill B2a criteria[1]
Uria aalge aalge	B2a	B2c	Does not fulfill B2a criteria[1]. Significant long-term decline within AEWA.
Uria aalge albionis	B2a	C1	Does not fulfill B2a criteria[1]
Uria aalge hyperborea	B2a	C1	Does not fulfill B2a criteria[1]
Uria lomvia	B2a	B2c	Does not fulfill B2a criteria[1]. Significant long-term decline within AEWA.
Alca torda torda	C1	C1	
Alca torda islandicus	C1	C1	
Cepphus grylle grylle	B1	B1	
Cepphus grylle mandtii	B1	C1	Higher population numbers than previously reported
Cepphus grylle arcticus	B1	C1	Higher population numbers than previously reported
Cepphus grylle islandicus	B1	A3c	Lower population numbers than previously reported, and significant long-term decline
Cepphus grylle faeroeensis	B1	A1c	Lower population numbers than previously reported
Fratercula arctica arctica	B2a	C1	Does not fulfill B2a criteria[1]
Fratercula arctica naumanni	B2a	A3a	Lower population numbers than previously reported
Fratercula arctica grabae	B2a	C1	Does not fulfill B2a criteria[1]

[1] *In accordance with AEWA resolution 4.12 paragraph 1a, Concentrated to a few sites means: " […] concentrates on a small number of sites means that 90 % of a population should be concentrated in ten or fewer sites during any part of the life cycle".*

9. LITERATURE CITED

1. A.J. Gaston 2002. Studies of High Latitude Seabirds. 5. Monitoring Thick-billed Murres in the Eastern Canadian Arctic, 1976-2000. Can Wildl. Serv. Occas. Pap. 106: 1-52.
2. A. J. Gaston, unpublished data.
3. Araújo M. B. 2008. Biogeografia e conservação das aves nidificantes em Portugal continental. In Atlas das Aves Nidificantes em Portugal (1999-2005) (eds. Equipa Atlas). pp. 57-66. Instituto da Conservação da Natureza e da Biodiversidade, Sociedade Portuguesa para o Estudo das Aves, Parque Natural da Madeira e Secretaria Regional do Ambiente e do Mar. Assírio & Alvim. Lisboa.
4. Andersson Å. 2010. Inventering av häckande alkor och storskarv på Hallands Väderö 2010. Rapport till Länsstyrelsen in Skåne 2010-08-25.
5. Andersson Å unpublished data.
6. Anker-Nilssen T., Bakken V., Strom H., Golovkin A. N., Bianki V. V. & Tatarinkova I. P. (Eds) 2000. The status of marine birds breeding in the Barents Sea region. Norsk Polarinstitutt 2000.
7. Barrett R. T. 1997. Brünnich's Guillemot *Uria lomvia*. Pp 370 in: Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.
8. Barrett R. T., Lorentsen S-H., Anker-Nilssen T. 2006. The status of Breeding Seabirds in mainland Norway. Atlantic Seabirds 8: 97-126.
9. Bertolero A., Genovart M., Martínez-Abraín A., Molina B., Mouriño J., Oro D. & Tavecchia G. 2008. Gaviotas cabecinegra, picofina, de Audouin y tridáctila, y gavión atlántico en España. Población en 2007 y método de censo. SEO/BirdLife. Madrid.
10. BirdLife International. 2010. Important Bird Areas factsheet: Jan Mayen Island. Downloaded from http://www.birdlife.org on 08/12/2010.
11. Boertmann D. & Mosbech A. 1998. Distribution of Little Auk *Alle alle* breeding colonies in the Thule district, northwest Greenland. Polar Biology 19. 206 - 210.
12. Boertmann, D. 2008. Grønlands Rødliste 2007. – Grønlands Hjemmestyre og Danmarks Miljøundersøgelser, 152 p.
13. Boertmann D., Mosbech A., Bjerrum M., Labansen A.L. & Merkel F. 2010. The Greenland seabird colony register. – Poster at 1st Seabird World Conference, Victoria 7-11 Sept. 2010.
14. Bourne W. B. P. 1997. Little Auk *Alle alle*. Pp. 371 in: Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.
15. Burfield I. & van Bommel F. 2004. Birds in Europe (Population estimates, trends and conservations status). BirdLife Int., BirdLife Conserv. Ser. no. 12. i-xxiv+374 pp.
16. Bregnballe T. Aarhus University, unpublished data.
17. Cadiou B., Pons J.-M. & Yésou P. (Eds) 2004. Oiseaux marins nicheurs de France métropolitaine (1960-2000). Éditions Biotope, Mèze, 218 p.
18. Chardine J. W. 2000. Census of Northern Gannet colonies in the Atlantic Region in 1999. Can. Wildl. Serv., Atlantic Region Tech. Rep. Ser. 361: 1-13.
19. Coulson J. C. 2002. Kittiwake *Rissa tridactyla*. Pp 377-380 in: Wernham C., Siriwardena G. M., Toms M., Marchant J., Clark J. A., & Baillie S. (Eds) 2002. The Migration Atlas: Movement of the Birds of Britain and Ireland. Christopher Helm Publishers Ltd. 1st Edition. 900 pp.
20. de Seynes et les coordinateurs espèces 2010. Les oiseaux nicheurs rares et menacés en France en 2009. Ornithos 17: 137-168.
21. del Hoyo J., Elliott A., Sargatal J. & Christie D. A. (Eds) 1992. Handbook of The birds of the World, Vol. 1: Ostrich to Ducks. Lynx Edicions. 696 pp.
22. del Hoyo J., Elliott A., Sargatal J. & Christie D. A. (Eds) 1996. Handbook of The birds of the World, Vol. 3: Hoatzin to Auks. Lynx Edicions. 821 pp.
23. Dickinson E. C. (Eds) 2003. The Howard and Moore Complete Checklist of the Birds of the World: Third Edition. Christopher Helm, London, 1040 pp.
24. Dierschke J., Dierschke V., Schmaljohann H. & Stühmer F. 2010. Ornithologischer Jahresbericht 2009 für Helgoland. Ornithol. Jber. Helgoland 20: 1-73.
25. Egevang C., Boertmann D., Mosbech A. & Tamstorf M.P. 2003. Estimating colony area and population size of little auks *Alle alle* at Northumberland Island using aerial images. Polar Biol 26: 8–13.
26. Elts J., Kuresoo A., Leibak E., Leito A., Leivits A., Lilleleht V., Luigujõe L., Mägi E., Nellis R., Nellis R. & Ots M. 2009. Status and numbers of Estonian birds, 2003–2008. Hirundo 22: 3–31 (in Est, with Eng. summ.).
27. Evans P. G. H. 1984. Status and Conservation of seabirds breeding in Northwest Europe (excluding Norway and U.S.S.R). In: Croxall J. P., Evans P. G. H. & Schreiber R. W. (Eds) Status and Conservation of the World's seabirds. International Council for bird Preservation Tech. Publ. 2, Cambridge.
28. Ewins P. J. & Hildén O. 1997. Black Guillemot *Cepphus grylle*. Pp. 374-375 In: Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.
29. Finley K. J. & Evans C. R. 1984. 1st Canadian Breeding Record of the dovekie (*Alle alle*) Arctic 37: 288-289.
30. Furness R. W. & Ratcliffe N. Great Skua *Stercorarius skua*. Pp 171-186 in: Mitchell P. I., Newton S. F., Ratcliffe N. & Dunn T. E. (Eds) 2004. Seabird Populations of Britain and Ireland. Results of the Seabird 2000 Census (1998-2002). T & AD Poyser Ltd (A & C Black). 511 pp.
31. Furness R. W. 1997a. Great Skua. Pp 322 in: Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.
32. Furness R. W. 1997b. Long-tailed Skua. Pp 321 in: Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.
33. Gabrielsen G. W., Brekke B., Alsos I. G. & Hansen J. R. (Eds) 1997. Natur- og kulturmiljoet på Jan Mayen. Norwegian Polar Institute, Tromso.
34. Gardarsson A. 2009. Counts of Gannets 2005-2008. Bliki 29: 19-22 (Icel., Engl. summ.).
35. Gardarsson A. 2010. Cliff-nesting seabirds in Iceland. Talk at Marine Research Institute 24.09.2010.
36. Gaston A. J. & Jones I. L. 1998. Bird Families of the World The Auks: Alcidae. Oxford University Press, Oxford.
37. Grimmett R. F. A. & Jones T. A. 1989. Faroe Islands in Important bird areas in Europe. International Council for Bird Preservation. Technical Publiction No. 9 pp 137-144.
38. Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.

39. Hansen J., Hansen L.H., Christensen M.U., Michelsen A. & Schmidt N.M. 2009. 4 Zackenberg Basic. The BioBasic programme, pp. 40-65 in Jensen L.M. & Rasch M. (Eds) ZERO 14th annual report, 2008. National Envirionmental Research Centre, Aarhus University.
40. Harris M. P. & Wanless S. 2004. Common Guillemot *Uria aalge*. Pp 350-363 in: Mitchell P. I., Newton S. F., Ratcliffe N. & Dunn T. E. (Eds) 2004. Seabird Populations of Britain and Ireland. Results of the Seabird 2000 Census (1998-2002). T & AD Poyser Ltd (A & C Black). 511 pp.
41. Harris M. P. 1997. Puffin *Fratercula arctica*. Pp 376-377 in: Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.
42. Heubeck M. Black-legged Kittiwake *Rissa tridactyla*. Pp 277-290 in: Mitchell P. I., Newton S. F., Ratcliffe N. & Dunn T. E. (Eds) 2004. Seabird Populations of Britain and Ireland. Results of the Seabird 2000 Census (1998-2002). T & AD Poyser Ltd (A & C Black). 511 pp.
43. Hildén O. & Tasker M. 1997. Razorbill *Alca torda*. Pp 372-373 in: Hagemeijer E. J. M & Blair M. J. (Eds) 1997. The EBCC Atlas of European Breeding Birds: Their Distribution and Abundance. T & A D Poyser, London.
44. ICES 2004. Report of the Working Group on Seabird Ecology (WGSE). ICES CM 2004/C:05. 53 p.
45. Jensen J-K., Bloch D. & Olsen B. 2005. List of Birds seen in the Faroe Islands, Føroya Náttúrugripasavn. Tórshavn. 18 pp.
46. JNCC. 2010. Seabird Population Trends and Causes of Change: 2010 Report (http://www.jncc.gov.uk/page-3201). Joint Nature Conservation Committee. Updated July 2010. Accessed [2010-11-30].
47. Jóhannsson J. H. & Guðjónsdóttir B. 2007. The effect of mink-predation on six monitored Black Guillemot colonies in Strandasýsla, NW-Iceland. Náttúrufræðingurinn 76(1-2): 29-36. (Icel., Engl. summ.).
48. Jóhannsson J. H. & Guðjónsdóttir B. 2006. Changes in the breeding distribution and population size of the Black Guillemot *Cepphus grylle* in Strandasýsla, NW-Iceland. Náttúrufræðingurinn 74 (3-4): 69-80. (Icel., Engl. summ.).
49. Kampp K., Meltofte H. & Mortensen C.E. 1987. Population size of little auk *Alle alle* in East Greenland. Dansk Ornitologisk Forenings Tidsskrift 81: 129-136.
50. Kolbeinsson Y., Þráinsson G. & Pétursson G. 2008. Rare birds in Iceland 2005. Bliki 29: 23-44. (Icel., Engl. summ.).
51. Labansen, A., Merkel, F.R., Boertmann, D. & Nyeland, J. 2010. Status of the black-legged kittiwake (*Rissa tridactyla*) breeding population in Greenland, 2008. Polar Research doi:10.1111/j.1751-8369.2010.00169.x
52. Länsstyrelsen Västra Götaland 2009. Övervakning av den marina kustfågelfaunan i Västra Götaland 2001-2009.
53. Lund-Hansen L.C. & Lange P. 1991. The numbers and distribution of the Great Skua *Stercorarius skua* breeding in Iceland 1984-1985. Acta Nat. Isl. 34. 16 pp.
54. Lyngs P. 1992. Ynglefuglene på Græsholmen, 1925-90. - Dansk Orn. Foren. Tidsskr. 86: 1-93.
55. Lyngs P., unpublished data.
56. Mallory M., Akearok J. & Gaston A. J. 2009. Status of High Arctic Black-Legged Kittiwake (*Rissa tridactyla*) Colonies in Barrow Strait, Nunavut, Canada. Arctic 62: 96-101.
57. Mallory M. L. & Fontaine, A. J. 2004. Key marine habitat sites for migratory birds in Nunavut and the Northwest Territories. Can Wildl. Serv. Occas. Pap. 109: 1-92.
58. Merkel F.R., Labansen A., & Witting L. 2007. Monitering af lomvier og rider i Qaanaaq kommune, 2006. Greenland Institute of Natural Resources, Nuuk, Technical report No. 69. 82 pp.
59. Mitchell P. I., Newton S. F., Ratcliffe N. & Dunn T. E. (Eds) 2004. Seabird Populations of Britain and Ireland. Results of the Seabird 2000 Census (1998-2002). T & AD Poyser Ltd (A & C Black). 511 pp.
60. Munilla A., Diez C. & Velando A., 2007. Are edge bird populations doomed to extinction? A retrospective analysis of the common guillemot collapse in Iberia. Biological Conservation 137: 359-371.
61. NERI 2007. Database of Greenlandic seabird colonies. National Environmental Research Institute (NERI), Denmark.
62. Nettleship D. N. & Evans P. G. H. 1985. Distribution and Status of the Atlantic Acidae. Pp 53 - 154 in: Nettleship D. N. & Birkhead T. R. (Eds) The Atlantic Alcidae. London: Academic Press.
63. Ottosson U., Ottvall R., Green M., Gustafsson R., Haas F., Holmqvist N., Lindström Å., Nilsson L., Svensson M., Svensson S. & Tjernberg M. (in prep). Fåglarna i Sverige - antal och utbredning i län och landskap.
64. Ottvall R., Edenius L., Elmberg J., Engström H., Green M., Holmqvist N., Lindström Å., Pärt T. & Tjernberg M. 2009. Population trends for Swedish Breeding Birds. Ornis Svecica 19: 117-192.
65. Petersen A. 1976. Size variables in Puffins *Fratercula arctica* from Iceland, and bill features as criteria of age. Ornis Scandinavica 7: 185-192
66. Petersen A. 1998. Icelandic Birds. Vaka-Helgafell, Reykjavik. 312 pp. (In Icelandic).
67. Petersen A. 2000. Monitoring of Icelandic seabirds. Natturufraedingurinn 69(3–4): 189–200. (Icel., Engl. summ.).
68. Petersen A., Irons D., Anker-Nilssen T., Artukhin Y., Barrett R., Boertmann D., Egevang C., Gavrilo M. V., Gilchrist G., Hario M., Mallory M., Mosbech A., Olsen B., Osterblom H., Robertson G. & Strøm H. 2008. Framework for a Circumpolar Arctic Seabird Monitoring Network. CAFF CBMP Report No.15 . CAFF International Secretariat, Akureyri, Iceland.
69. Peterz M. & Blomqvist S. 2010. Connectivity and age distribution of the Baltic Common Guillemot *Uria aalge* population: evidence from morphometry and ringing recoveries. Ardea 98: 169–178.
70. Rassi, P., Hyvärinen, E., Juslén, A. & Mannerkoski, I. (Eds) 2010: The 2010 Red List of Finnish Species. Ympäristöministeriö & Suomen ympäristökeskus, Helsinki. 685 p.
71. Sangster G., Collinson J. M., Helbig A. J., Know A. G. & Parkin D. T. 2005. Taxonomic Recommendation for British Birds: third report. Ibis 147: 821–826.
72. Strøm H., Gavrilo M.V., Krasnov J.V. & Systad G.H. 4.3.7 Seabirds Joint Norwegian-Russian Environmental Status 2008. Report on the Barents Sea Ecosystem. Part II – Complete report. IMR/PINRO Joint Report Series, 2009. (3). P. 219–222.
73. van Franeker J. A., Camhuysen K. J. & Mehlum F. 1998. The Birds of Jan Mayen. Circumpolar Journal 13: 28-43.
74. Wader W. 1994. Fjelljo *Stercorarius longicaudus*. In: Gjershaug, J. O., Thingstad, P. G., Eldøy, S. & Byrkjeland, S. (Eds) Norsk fugleatlas. Norsk Ornitologisk Forening, Klæbu. (In Norwegian).
75. Wanless S. & Harris M. P. 2004. Northern Gannet *Morus bassanus*. Pp 115-127 in: Mitchell P. I., Newton S. F., Ratcliffe N. & Dunn T. E. (Eds) 2004. Seabird Populations of Britain and Ireland. Results of the Seabird 2000 Census (1998-2002). T & AD Poyser Ltd (A & C Black). 511 pp.